

LISTING OF CLAIMS

Claim 1 (currently amended): A stent ~~formed of a plurality~~ consisting of essentially triangular cells, each triangular cell comprising:

a first loop containing section, the first loop containing section arranged generally in the circumferential direction,

a second loop containing section, the second loop containing section arranged generally in the circumferential direction and joined to the first loop containing section at a first junction; and

a third loop containing section joined to the first loop containing section at a second junction and joined to the second loop containing section at a third junction;

wherein a plurality of first loop containing sections form a first band of loops and a plurality of second and third loop containing sections form a second band of loops, the first and second bands alternating along the longitudinal axis of the stent; and

wherein the first, second, and third loop containing sections include legs that are substantially aligned along the longitudinal axis, and at least one of the legs in any one of the loop containing sections is shorter than at least one other leg in the same loop containing section within the triangular cell; and, ~~wherein each leg changes its orientation upon expansion~~

wherein the first loop containing section has wider legs than the second and third loop containing sections.

Claim 2 (original): A stent according to claim 1, wherein the first loop containing section is relatively adapted to enable radial support, and the second and third loop containing sections are relatively adapted to enable longitudinal flexibility.

Claim 3 (currently amended): A stent according to claim ~~claims 1 or 2~~, wherein ~~the first loop containing section has wider legs than the second and third loop containing sections~~ the second and third loop containing sections are adapted to compensate for foreshortening of the first loop containing section when the stent is expanded.

Claim 4 (previously presented): A stent according to claim 3, wherein the first loop containing section has three loops.

Claim 5 (original): A stent according to claim 4, wherein the second loop containing section has two loops.

Claim 6 (original): A stent according to claim 5, wherein the third loop containing section has two loops.

Claims 7-8 (canceled)

Claim 9 (previously presented) A stent according to claims 1 or 5, wherein the second and first junctions are circumferentially aligned.

Claim 10 (original) A stent according to claims 1 or 2, wherein each cell in the stent encompasses the same area.

Claim 11 (original) A stent according to claims 1 or 2, wherein the cell is arranged so that when expanded a length of the cell along a circumference of the stent is longer than a length of a cell along the longitudinal axis of the stent.

Claims 12-19 (withdrawn)

Claim 20 (original) A stent according to claims 1 or 2, wherein the stent is finished in one of the following ways: plating with a radiopaque material, plating with a protective material, embedding with medicine, or covering with a material.

Claim 21 (currently amended) A stent for widening a vessel in the human body ~~comprising~~ consisting of:

a plurality of first meander patterns having loops;

a plurality of second meander patterns having loops intertwined with the first meander patterns to form triangular cells, each of said triangular cells having at least one loop containing section arranged generally in the circumferential direction, the loop containing section having legs that are substantially aligned along the longitudinal axis of the stent, wherein at least one of the legs of the loop containing section is shorter than at least one other leg in the same loop containing section within the triangular cell and the first meander patterns are joined together through the second meander patterns; and, ~~wherein each leg changes its orientation upon expansion~~ wherein the legs of the first meander pattern are wider than at least one of the legs of the second meander pattern.

Claim 22 (original): A stent according to claim 21 wherein the first meander patterns are comprised of:

even first meander patterns; and

odd first meander patterns which are 180° out of phase with the even first meander patterns, the odd first meander patterns occurring between every two even first meander patterns.

Claim 23 (original): A stent according to claims 21 or 22 wherein the second meander patterns are comprised of:

even second meander patterns; and

odd second meander patterns occurring between every two even second meander patterns.

Claim 24 (original): A stent according to claim 21, wherein each of the triangular cells is comprised of a first loop containing section, a second loop containing section, and a third loop containing section.

Claim 25 (original): A stent according to claim 24, wherein the first loop containing section is formed by a portion of a first meander pattern and the second and third loop containing sections are formed by portions of one or more second meander patterns.

Claims 26-27 (cancelled):

Claim 28 (previously presented): A stent according to claim 21, wherein the first meander pattern has three loops per cell.

Claim 29 (previously presented): A stent according to claim 23, wherein the second meander patterns comprise at least four loops per cell.

Claim 30 (previously presented): A stent according to claim 24 wherein the first and second meander patterns have center lines that are substantially orthogonal.

Claim 31 (original): A stent according to claim 24, wherein the first loop containing section has two loops facing toward the interior of the cell.

Claim 32 (previously presented): A stent according to claim 24, wherein the second and third loop containing sections each have two loops.

Claim 33 (original): A stent according to claims 24, 28 or 32, wherein the loops of the second and third loop containing sections are adapted to compensate for the tendency of the loops of the first loop containing section to foreshorten when the stent is expanded.

Claim 34 (cancelled)

Claim 35 (original) A stent according to claims 24, 28 or 32, wherein the odd and even second meander portions have portions in common wherein said meanders run in the same direction.

Claims 36-50 (cancelled)

Claim 51-66 (withdrawn)

Claims 67-94 (cancelled)

Claim 95 (currently amended): A stent ~~for holding open a blood vessel~~ formed consisting of a plurality of essentially triangular cells, each triangular cell comprising:

a first loop containing section that includes a plurality of loops and legs, the first loop containing section arranged generally in the circumferential direction, the loops in said first loop containing section occurring at a first frequency;

a second loop containing section that includes a plurality of loops and legs, the second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section occurring at a second frequency; and

a third loop containing section that includes a plurality of loops and legs, the loops in said third loop containing section also occurring at a second frequency that is higher than said first frequency, said third loop containing section joined to said first and second loop containing sections such that a plurality of first loop containing sections are joined together through the second and third loop containing sections without connection directly between the first loop containing sections;

wherein the loop containing sections include legs that are substantially aligned along the longitudinal axis, and at least one of said legs in any one of the loop containing sections is shorter than at least one other leg in the same loop containing section within the triangular cell, ~~wherein each leg changes its orientation upon expansion; and~~

wherein the first loop containing section has wider legs than the second and third loop containing sections.

Claim 96 (previously presented): A stent according to claim 95, wherein the first loop containing section is relatively adapted to enable radial support and the second and third loop containing sections are relatively adapted to enable longitudinal flexibility.

Claim 97 (previously presented): A stent according to claim 95, wherein the first loop containing sections have wider legs than the second and third loop containing sections.

Claim 98 (previously presented): A stent according to claim 95, wherein the first loop containing section has two loops for every three loops combined of said second and third loop containing sections.

Claim 99 (previously presented): A stent according to claim 95, wherein the loops in the second and third loop containing sections provide improved flexibility.

Claim 100 (previously presented): A stent according to claim 99, wherein, while flexing, loops in the second and third loop containing sections have maximal strain of the expanded stent within a blood vessel that is lower than the elastic limit of the material of the stent.

Claim 101 (previously presented): A stent according to claim 95, wherein the first loop containing sections are 180 degrees out of phase with each other.

Claim 102 (previously presented): A stent according to any of claim 101, wherein the first loop containing section is joined to said second and third loop containing sections such as to form a plurality of cells, each of which include two loops of said first loop containing section and three loops of said second and third loop containing sections combined.

Claim 103 (cancelled)

Claim 104 (original): A stent according to claim 95, wherein substantially each cell in the stent encompasses the same area.

Claim 105 (original): A stent according to claim 95, wherein the cell is arranged so that when expanded a length of the cell along a circumference of the stent is longer than a length of a cell along the longitudinal axis of the stent.

Claims 106-107 (withdrawn)

Claim 108 (currently amended): A stent for widening a vessel in the human body formed of a plurality of essentially triangular cells comprising:

a plurality of first circumferential bands consisting essentially of a basically sinusoidal pattern of loops at a first frequency,

a plurality of second circumferential bands consisting essentially of a basically sinusoidal pattern of loops at a second frequency higher than said first frequency, alternating with said first circumferential bands and periodically coupled thereto to form the triangular cells ;

wherein the circumferential bands have legs that are substantially aligned along the longitudinal axis of the stent and at least one leg of one of the circumferential band is shorter than another leg of the same circumferential band; and within a triangular cell, ~~wherein each leg changes its orientation upon expansion~~

wherein the first circumferential bands have wider legs than the second circumferential bands.

Claim 109 (currently amended): A stent according to claim 108 wherein the first circumferential bands containing a pattern of loops ~~are comprised of~~ comprise:

even first circumferential bands containing a pattern of loops; and

odd first circumferential bands containing a pattern of loops which are 180° out of phase with the loops of the even first circumferential bands, an odd first circumferential band occurring between every two even first circumferential bands.

Claim 110 (previously presented): A stent according to claim 108, wherein each cell includes two loops of one of said plurality of first circumferential bands and three loops of one of said plurality of second circumferential bands.

Claim 111 (original): A stent according to claim 108, wherein each cell includes a number of loops of said first circumferential band corresponding to two cycles of said first frequency and a number of loops of said second circumferential band corresponding to three cycles of said second frequency.

Claim 112 (cancelled)

Claim 113 (previously presented): A stent according to claim ~~[[112]]~~ 108, wherein the higher frequency of the loops in said second circumferential bands provide improved flexibility.

Claim 114 (previously presented): A stent according to claim 113, wherein, while flexing, elements in the higher frequency loops have maximal strain that is lower than the elastic limit of the material of the stent.

Claim 115 (cancelled)

Claim 116 (previously presented): A stent according to claim 108, wherein the first circumferential bands have loops forming two cycles per cell.

Claim 117 (previously presented): A stent according to claim 108, wherein the second circumferential bands have loops forming three cycles per cell.

Claim 118 (original): The stent of claim 95 wherein said stent is self-expanding.

Claim 119 (original): The stent of claim 95 wherein said stent is balloon expanded.

Claims 120-121 (cancelled)

Claim 122 (previously presented): A stent according to claims 21 or 22, wherein the second meander patterns consist essentially of even second meander patterns.

Claim 123-124 (cancelled)

Claim 125 (previously presented): A stent according to claim 100, wherein the stent is exposed to repeated flexing of a vessel caused by the systolic cycle in a coronary artery.

Claims 126-129 (cancelled)